

**ABSTRACT**

A waveform equalizer for equalizing a waveform of a reproduction signal. A delay element delays a propagation of the reproduction signal. A plurality of multipliers multiply predetermined coefficients by the reproduction signal and the delayed propagation reproduction signal. A detector detects an asymmetry of the reproduction signal arising from physical profiles of each of the marks and the non-marks, and outputs a detection signal representing an amount of asymmetry. A discriminator outputs a discrimination signal in response to a discrimination of the marks and the non-marks. A calculator calculates a first coefficient multiplied by the reproduction signal of the marks based on the outputted detection signal, and calculates a second coefficient multiplied by the reproduction signal of the non-marks. A selector selects either the first or second coefficient, based upon the outputted discriminating signal.